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From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

To:

Baldock, Sharon Claire  
BOULT WADE TENNANT  
Verulam Gardens  
70 Gray's Inn Road  
London WC1X 8BT  
GRANDE BRETAGNE

Date of mailing  
(day/month/year)

16.01.2004

Applicant's or agent's file reference  
SJA59666001

**IMPORTANT NOTIFICATION**

International application No.  
PCTGB 0204489

International filing date (day/month/year)  
03.10.2002

Priority date (day/month/year)  
10.10.2001

Applicant  
MICROSENS BIOPHAGE LIMITED

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

RECEIVED

19 JAN 2004

Name and mailing address of the international  
preliminary examining authority:



European Patent Office - Gitschiner Str. 103  
D-10958 Berlin  
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Authorized Officer

Geier, A **BOULT WADE TENNANT**

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# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>SJA59666/001</b>	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. <b>PCT/GB 02/04489</b>	International filing date ( <i>day/month/year</i> ) <b>03.10.2002</b>	Priority date ( <i>day/month/year</i> ) <b>10.10.2001</b>
International Patent Classification (IPC) or both national classification and IPC <b>C12Q1/68</b>		
Applicant <b>MICROSENS BIOPHAGE LIMITED</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of    sheets.

3. This report contains indications relating to the following items:

- I    ☒ Basis of the opinion
- II   ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV   ☐ Lack of unity of invention
- V    ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI   ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  <b>07.03.2003</b>	Date of completion of this report  <b>16.01.2004</b>
Name and mailing address of the international preliminary examining authority:  European Patent Office - Gitschiner Str. 103 D-10958 Berlin Tel. +49 30 25901 - 0 Fax: +49 30 25901 - 840	Authorized Officer  <b>De Kok, A</b>  Telephone No. +49 30 25901-314 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 02/04489**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-38 as originally filed

**Claims, Numbers**

1-44 as originally filed

**Drawings, Sheets**

1/6-6/6 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 02/04489**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
  - ☒ claims Nos. 1, 2, 31, 32, 42 and related claims, all partially  
because:
    - ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
    - ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
    - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
  - ☒ no international search report has been established for the said claims Nos. 1, 2, 31, 32, 42 and related claims, all partially
2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:
- ☐ the written form has not been furnished or does not comply with the Standard.
  - ☐ the computer readable form has not been furnished or does not comply with the Standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-44
	No: Claims	
Inventive step (IS)	Yes: Claims	8-14 22-24 29 30 37 38 40 41
	No: Claims	1-7 15-21 25-28 31-36 39 42-44
Industrial applicability (IA)	Yes: Claims	1-44
	No: Claims	

**2. Citations and explanations**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 02/04489**

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**see separate sheet**

**Re Item III**

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

**As outlined in the International Search Report (ISR) the search for claims 1, 2, 31, 32, 42 and related claims has been restricted to subject-matter which appeared to be supported and disclosed (see ISR, PCT/ISA form 210), i.e. the subject-matter of claim 3, i.e. methods wherein the interaction between nucleic acid moieties occurs by recombination.**

The International Examination Authority (IEA) fully supports the objections made in the ISR.

The Applicants attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The Applicant is advised that the EPO cannot normally carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any international Preliminary Examination procedure.

As a consequence, the present examination only relates to the searched subject-matter as identified above.

**Re Item V**

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

**1. Reference is made to the following documents:**

D1: WO 97 00446 A (LANDEGREN ULF) 3 January 1997

D2: KIM H-S ET AL: NUCLEIC ACIDS RESEARCH, OXFORD UNIVERSITY PRESS, SURREY, GB, vol. 16, no. 18, 1988, pages 8887-8903,

D3: WO 90 11375 A (DU PONT) 4 October 1990,

D4: WO 01 61037 A (FREDRIKSSON SIMON ;LANDEGREN ULF (SE)) 23 August 2001.

**2. Clarity, Support and Disclosure (Articles 5 and 6 PCT):**

- 2.1 Since recombination is a form of covalent cross-linking, the subject-matter of **claims 3-5** and claims dependent thereof, as well as the embodiments described on pages 25-28 and the examples, do not fall under the scope of claims 1, 2, 31, 32 and 42.
- 2.2 In addition to the objections made under item III above, it should be noted that no enabling examples has been given for the subject-matter of **claims 8-14, 22-24, 29, 30, 37, 38, 40 and 41**. Since these embodiments are not trivial, i.e. cannot be carried out by the skilled persons without using inventive skill, these claims lack support and disclosure.
3. **Inventive step** (Article 33(3) PCT):
- 3.1 Document D1, which represents the closest prior art, discloses (see abstract and pages 3-6) a method for the detection of a target molecule wherein the sample is contacted with binding moieties having nucleic acid tags. If binding with the target occurs, the tags interact and are covalently cross-linked by ligation to form an amplicon, which can be detected by PCR.
- The distinguishing feature between D1 and the subject-matter of claim 1 is that the formation of the amplicon is the result of a recombination event.
- Since this distinguishing feature has no technical effect, since with both methods an amplicon is formed, the method disclosed in D1 and the method of the present invention are alternatives.
- Thus the objective technical problem underlying the claimed subject-matter with regard to D1 can be defined as finding an alternative method to generate an detectable amplicon upon interaction between two nucleic acid tags.
- Document D2 discloses a method for the detection of recombination events wherein desired recombination events result in the formation of an amplicon.
- Thus, it would be obvious to the person skilled in the art, namely when the same result is to be achieved, to combine the methods of D1 and D2 in order to arrive at the subject-matter of claims 1-5, 31- 35, 42 and 44.
- The subject-matter of **claim 1-5, 31- 35, 42 and 44** does therefore not involve an inventive step.
- 3.2 As the features of **claims 6, 7, 15-21, 25-28, 36 and 43** are described in documents D1-D4 as providing the same advantages as in the present application, these claims are not inventive either.